THE

AMERICAN REVIEW OF TUBERCULOSIS
ABSTRACTS OF TUBERCULOSIS

VOLUME XXII OCTOBER, 1930 ABST. NO. 4

CONTENTS

PAGES

Diseases Other than Tuberculosis (continued)..... 73–88

Serum Treatment of Pneumonia.—Favorable results are reported in cases of pneumococcus pneumonia treated with serum. In type I cases, the mortality was reduced 42 per cent and in type II cases 22 per cent. Nine cases are reported.—*Serum Treatment of the Pneumococcus Pneumonias, J. G. M. Bullowa, Brit. M. J., May 25, 1929, no. 3568, 943.*—(*W. I. W.*)

Chronic Bronchitis.—Following the bronchographic examination of a large number of patients suffering from so called chronic bronchitis, evidence of bronchial dilatation was found in more than 90 per cent of the cases. All cases of chronic winter coughs lasting over a period of months, attacks of acute bronchitis, without roentgenographic evidence of tuberculosis, should be given the advantage of a bronchography. The introduction of iodized oil into the tracheobronchial tree is of distinct therapeutic value in these cases, as well as in cases of definite bronchiectasis with copious foul sputum. To secure the necessary wide appreciation of bronchography the method used for introducing the iodized oil should be simple, harmless, and not unpleasant for the patient. This is best accomplished by the passive technique, which is less complicated and unpleasant than any of the other four common methods, namely, the transglottic or syringe method; the subglottic route, by means of a needle through the cricothyroid membrane; the intralaryngeal method, through a catheter introduced into the larynx; and the bronchoscopic method. In the passive method, after an antiseptic mouth-wash, the anterior tonsillar pillars are painted with 10 per cent cocaine solution, continuing the anaesthesia until the swallowing reflex is abolished. The patient then takes into his mouth 3 cc. of a 3 per cent solution of procaine hydrochloride, tips his head backward, protrudes his tongue, and aspirates the anaesthetic into the trachea. After painting the anterior pillars again, the patient is placed behind the fluoroscopic screen, given 10 cc. of iodized oil and aspirates it into the proper bronchial tree with the aid of posture. The author has used this method in 1500 instances without untoward results.—*An Unappreciated Cause of Chronic Bronchitis, A. Ochsner, J. Am. M. Ass., July 20, 1929, xciii, 188.*—(*G. L. L.*)

Foreign Body in Bronchus.—Following the extraction of teeth under gas and ether anaesthesia, a patient developed fever and an unproductive cough. Roentgen examination of the chest revealed that the right diaphragm was much higher than normal and strangely enough there was very little, if any, limitation of the respiratory motion of the right diaphragm. The lung field above the diaphragm was clear. There was only slight displacement of mediastinal shadows toward the right, and there was no narrowing of the interspaces. Bronchoscopy was performed and disclosed a foreign body in the right descending bronchus which was removed. The patient made an uneventful recovery.—*Foreign Body in the Bronchus, R. Dresser, Am. J. Roentgenol. & Rad. Ther., May, 1929, xxi, 472.*—(*W. I. W.*)

Bronchiectasis.—The knowledge acquired in the study of 92 cases of bronchiectasis seems to justify the following conclusions: *1:* In about 60 per cent of all cases a

diagnosis of bronchiectasis can be made from a study of the plain films. *2:* In the majority of the remaining cases, such an examination will reveal findings of a nature to indicate the probable presence of bronchiectasis or the desirability for further investigation by bronchography. *3:* Diagnostic bronchography with iodized oil is essential for obtaining accurate information relative to the nature, location and extent of bronchiectatic dilations.—*Bronchiectasis, A. Hartung, Am. J. Roentgenol. & Rad. Ther., August, 1929, xxii, 120.*—(*W. I. W.*)

Bronchiectasis in Childhood.—A series of 53 cases of bronchiectasis in children under thirteen years, occurring in a five-year period, is reported. Bronchopneumonia, pertussis and measles are the common antecedent factors in the production of bronchiectasis, since they carry infection deep into the framework of the bronchi and lungs. Disease of the accessory sinuses is thought to be a concomitant factor in maintaining a state of sepsis. Tables are given to demonstrate the protean nature of the disease and to correlate the physical findings with the pathological lesions, especially in early cases. Evidence has been presented showing the damaging effect of the disease on the nutritional state of the affected children. A rational mode of treatment includes drainage of the pus-filled bronchi and care of the general health of the patient.—*Chronic Bronchiectasis in Childhood, with Observations on Early Diagnosis, E. S. Thorpe, Jr., Am. J. M. Sc., June, 1929, clxxvii, 759.*—(*W. I. W.*)

Cavities and Bronchiectasis.—In no case was the healing of a cavity noted in a progressive fatal case of tuberculosis. The ideal healing of the cavity occurs most frequently in those cases in which the tuberculosis healed clinically. The histological differentiation between healed cavities and bronchiectases is possible in most cases, especially when the wall reveals a typical bronchiectatic tissue structure. The points of differentiation given are (1) high cylindrical epithelium; (2) circular or longitudinal smooth musculature; (3) circular layers of elastic fibres; and (4) cartilagenous tissue; which all point to the bronchiectatic character of the condition. The expression "bronchiectatic cavities" is considered a contradiction since a cavity is a hole resulting from destructive processes. In the contraction of cavities bronchiectases can develop in the close vicinity and these may reveal inflammatory changes as well as connective-tissue infiltration.—*Histologische Untersuchungen über die Beziehungen zwischen Kavernen und Bronchiektasien, zugleich ein Beitrage zur Frage der Kavernenheilung, E. Melzer, Beitr. z. Klin. d. Tuberk., 1928, lxx, 694.*—(*H. J. C.*)

Abscess of Lung.—A consideration of the pathogenesis of pulmonary suppuration following tonsillectomy is presented from the points of view of the embolic and aspiratory hypotheses. Results of experimentations on animals as well as clinical experience point to the fact that, while embolic abscesses may occur, they are exceptional. The greater amount of evidence is in favor of aspiration as the mode of production of suppuration of the lung following operations on the upper respiratory tract. Three of 27 dogs that received, through the bronchoscope, 0.5 cc. of mixed cultures of bacteria recovered from the sputum of patients with abscesses of the lungs following tonsillectomy, developed abscesses with cavities, one developed pulmonary suppuration, and a fifth presented evidence of a healed suppurative process in the lower lobe of the left lung,—14.8 per cent of pulmonary suppuration. Suppuration following tonsillectomy, characterized by Aschner as bronchiectatic, extrabronchial abscess and suppurative pneumonitis, have been found by him in specimens of the lungs studied from two to five years after tonsillectomy. While the last two forms have been obtained experimentally, bronchiectatic abscess could not be produced by this method in dogs. The reason suggested for this failure is to be found in the rapid tendency on the part of abscesses experimentally produced in dogs to go on to healing. Encapsulation of the abscess was already observed as early as the eleventh day. The development of pulmonary abscesses in dogs is first manifested by the presence of pneumonia as demonstrable by the roentgen rays. This is comparable to the condition seen in the human being in the earliest stages following tonsillectomy. Subsequent stages of this condition, as studied histologically in dogs, are characterized by the occurrence of necrosis within the pneumonic area and in cavity-formation. This may persist or go on to healing. If results obtained in dogs may be translated to the conditions occurring in man, it is suggested that following aspiration of infectious material from the upper respiratory tract, the current of events is as follows: (1) pneumonitis; (2) necrosis and cavity-formation; (3) healing or persistence of the primary abscess with the formation of secondary bronchiectasis.—*The Pathogenesis of Aspiratory Abscess of the Lung: Its Possible Relation to Abscess of the Lung Following Tonsillectomy, J. Harkavy, Arch. Int. Med., June, 1929, xliii, 767.*—(*W. I. W.*)

Treatment of Pulmonary Abscess with Artificial Pneumothorax.—The author reports 4 cases of pulmonary abscess treated with artificial pneumothorax and in one of these healing occurred. It is pointed out that the early institution of pneumothorax is necessary since adhesions interfere with the proper institution at a later period. If pneumothorax does not succeed surgical intervention is advised.—*Über die Behandlung des Lungenabscesses, Bredow, Beitr. z. Klin. d. Tuberk., 1928, lxx, 707.*—(*H. J. C.*)

Treatment of Deepseated Pulmonary Abscesses.—The author attempted to elaborate on Sauerbruch's compression with paraffin by using pieces of sponge which had been sterilized by cooking in dilute sublimate solution. The dogs used for the experiment were killed after 2 to 3 weeks and the sponge as well as the sponge bed examined macroscopically and microscopically. When healing occurred without any adverse reaction to the pieces of sponge it was found firmly adherent to the pleura and pulmonary tissues, while the pulmonary section was compressed and free from air. In one case there was a phlegmon of the chest-wall, and two dogs died of empyema as the result of perforation into the pleural cavity.—*Technisches zur Behandlung tiefliegender Lungeneiterungen, M. Saidman, Centralbl. f. Chir., 1928, lv, 1746.*—(*H. J. C.*)

Emphysema and Heart.—Sixty-six patients with advanced emphysema were examined to determine whether the heart is injured in this condition. Symptoms of cardiac decompensation, such as cyanosis and dyspnoea on exertion, were present in 58, and oedema was also present in 18. The cases studied had a definite aetiology ascribable either to a bronchial lesion or to one of the chest-wall. Nine of the cases came to autopsy. The normal ratio of right to left ventricular weight was maintained in all instances. In 8 there was no evidence of right or left ventricular dilatation or hypertrophy or of excessive fibrosis. It was noticed that the symptoms simulating cardiac decompensation became worse when there were acute exacerbations of the underlying pulmonary disorders. It was finally concluded that the dyspnoea and cyanosis could be attributed to the lowered vital capacity, resulting in a reduced oxygen content of the arterial blood. The oedema was ascribed to increased peripheral venous pressure and anoxaemia. A study was made of experimental emphysema produced in dogs, and it was found that, as emphysema developed, the intrapleural pressure rose. This was followed by a rise in the peripheral venous pressure. Since the flow of blood to the right heart depends, in part, on the negative intrathoracic pressure, any mechanism that lessens this negative pressure tends to block the venous return, resulting in increased peripheral venous pressure, with the right heart actually receiving less blood than normally, which may explain the absence of hypertrophy in the cases which came to autopsy.—*Emphysema Simulating Cardiac Decompensation, W. B. Kountz, H. L. Alexander and D. Dowell, J. Am. M. Ass., November 2, 1929, xciii, 1369.*—(*G. L. L.*)

Pneumococcic Empyema.—Of nine patients with pneumococcus empyema thoracis, all received repeated intrapleural injections, after aspiration of pus, of from 5 to 10 cc., of a 5 per cent sterile, watery, warm solution of ethylhydrocupreine hydrochloride. Four patients later required rib resection and drainage; five patients made complete nonoperative recoveries. There were no deaths in any of the cases, and none developed any serious or disabling complications or sequelae. Slight transient infections of the puncture wound occurred in several cases. There was a retrogressive change in the character of the exudate in all of the cases, even in those which later came to surgery, from a thick yellowish pus to a thin serofibrinous and watery fluid. One great advantage of this procedure is that it delays any radical operative procedure until a time long past that when the pneumonia has subsided, eliminating the danger of a pneumothorax at that time. During the period of treatment it is possible to markedly increase the patient's resistance and weight. All nine cases came to surgery practically free from fever and dyspnoea.—*Pneumococcic Empyema: Treatment by Intrapleural Injections of Ethylhydrocupreine Hydrochloride, H. Lowenburg, J. Am. M. Ass., July 13, 1929, xciii, 106.*—(*G. L. L.*)

Aspiration in Empyema.—Thirty-seven patients, all except two under 8 years of age, were treated for empyema, the treatment consisting of aspiration alone in all except five patients. Of this series of cases 3 children died, a mortality of 9 per cent. The remaining patients are apparently normal in every way. In all 122 aspirations were performed, with either a syringe or a Potain aspirator, after local anaesthesia, and no shock or alarming symptoms were encountered. The interval between aspirations was determined by the symptoms, and there was always a tendency toward delay rather than haste, as it was felt that empyema is rarely, if ever, an emergency. A few of the patients had a very limited amount of pus.

Cultures were made in all cases, 28 showed pneumococcus, three haemolytic streptococcus and one *Staphylococcus albus*. The average hospital stay was about 15 weeks. As a rule the temperature dropped to nearly normal following aspiration, with a gradual elevation within a week or more. In only 3 cases was there a transient needle-tract infection. In 50 per cent of the patients spontaneous pneumothorax occurred as a complication, but it was noticed that very often this occurrence was a factor in bringing about recovery. In no instance was there a persistent bronchial fistula. In the majority of cases no attempt was made to aspirate all the pus, and apparently large amounts can safely be absorbed or evacuated spontaneously. Among other observations it would seem that children under 3 years of age do better with aspiration alone than with the open operation, and also fare better than older children. Of this series, 50 per cent were under 3 years of age, in which group there was only one failure, and 12 per cent were less than or just 12 months old. The authors would favor aspiration alone in the treatment of children under 3 years of age; it would seem probable that infants bear infringement on their vital capacity, such as would occur with the open operation, less well than do children or adults. In children over 10 or 12 years of age, the omission of aspiration is favored, or at least there should be earlier operation.—*Aspiration in Empyema of Children, E. T. McEmery and J. Brennemann, J. Am. M. Ass., August 3, 1929, xciii, 362.*—(*G. L. L.*)

Treatment of Empyema.—Fifty-seven patients with acute, chronic, and tuberculous empyema, have been treated with an irrigating apparatus that permits a very satisfactory tidal irrigation, adding fresh irrigating fluid at a point near the chest, giving the desired suction without any machinery or complicated drip apparatus, and automatically varying the amount of suction or positive pressure so as to distend the empyema cavity by adding clean solution, then emptying it by sucking off the diluted pus. This alternation probably prevents a too rapid expansion of the lung, and also should prevent the formation of pockets of pus by pleural adhesions. Drainage of the empyema by this method is as good as or better than with a rib resection and open drainage and osteomyelitis of the ribs is less likely to occur; hence recurring abscesses are infrequent. By this method patients with acute streptococcus empyema can be treated by early drainage. Patients with bilateral massive empyema can be treated by drainage, and sufficient lung expansion can be maintained by the proper adjustment of suction. Chronic or even tuberculous empyema cavities can be cleaned and obliterated either by irrigation and suction alone, or by these in association with phrenicectomy and thoracoplasty. Bronchial fistulae close within a short time, and cough is quickly relieved. None of the patients so treated developed chronic empyema, and no patient was discharged with a draining sinus. There is usually less thickening of the pleura, chest deformity is almost unknown, and convalescence is definitely hastened. The aetiological microorganisms were chiefly of the pneumococcus, streptococcus and staphylococcus groups. For 13 children, two years of age and under, the mortality rate was 8 per cent as compared with 50 per cent over the preceding 15 years. The hospital mortality rate for the 50 patients treated was 10 per cent, but three deaths were due to hopeless complications present at the time of operation.—*Empyema, Acute, Chronic and Tuberculous: Report of Fifty Cases Treated by Tidal Irrigation and Suction, D. Hart, J. Am. M. Ass., November 30, 1929, xciii, 1724.*—(*G. L. L.*)

Closed Drainage of Empyema.—It takes from one to three weeks from the beginning of a pleural infection before the empyemic abscess can be limited and localized by tough pleural adhesions. Open drainage before this occurs substitutes a tremendously large empyema for a localized one, and in the case of a very flexible mediastinum, may result in death from anoxaemia. In the presence of thin streptococcal pus, firm adhesions may not form for three weeks. Safe removal of the increasing amount of pus during the period when open drainage is unsafe may be accomplished by either repeated needle aspirations or closed air-tight drainage. If aspirated empyemic pus, no matter what the character or how high the fever, shows no pyogenic organisms on culture, closed or open-tube drainage is contraindicated, as it may be a pure tuberculous empyema, and tube drainage will result in secondary infection. The best time to perform closed-tube drainage is within a few days of the onset, before massive fibrinopurulent clots have formed. A satisfactory technique for the closed operation for drainage follows: The posterior axillary line is the site usually chosen, and the intercostal space selected is that over the lower midportion of the empyema. The bottom of the abscess is not sought because of danger of wounding the diaphragm and because with this method absolutely dependent drainage is not neces-

sary. The anaesthetic used is 0.5 per cent apothesine solution. The tissues over the ribs are pushed upward for the incision, so that on release the tube passes obliquely into the pleural cavity. The skin is incised only enough to accept the selected size of endoscope (in children as young as 3 or 4 an endoscope with an outside diameter of 11 mm. may be used). After further opening with a closed haemostat, the endoscope is pushed through, and with the obturator withdrawn the pus wells up and seals the pleural cavity against entrance of air. A rubber tube is inserted, and clamped off. The inner end should be not more than 3 cm. beyond the parietal pleura. A second tube, small, such as a Dakin tube, should be inserted into the interspace above, to provide an avenue for antiseptic washings. The tubes are held in position by being tied to a perforated rubber sheet strapped to the skin with adhesive. The pus is allowed to escape very slowly, and very little is removed in the operating room. At hourly intervals 60 cc. of pus are allowed to escape under sterile boric-acid solution until drainage ceases. Then the drainage tube is connected, through a sterile glass couple, with a long tube whose end is placed under the surface of fluid, for continuous drainage. At the proper intervals, the irrigating tube can be used for washing the pleural cavity with boric acid or chlorinated soda solution. This closed method hastens expansion of the lung and obliteration of the empyemic cavity, and after pleural adhesions have formed the tubes may be removed, in about ten days, to continue with open drainage if necessary because of repeated plugging. Respiratory exercises should be used to hasten closure of the pleural cavity. It is preferable not to remove the drainage tube until such time as the cavity is practically obliterated.—*Air-Tight Intercostal Drainage of Acute Empyema, J. Alexander, J. Am. M. Ass., June 1, 1929, xcii, 1818.*—(*G. L. L.*)

Spontaneous Nontuberculous Pneumothorax.—Spontaneous nontuberculous, nontraumatic pneumothorax is rare. A case is reported of a schoolgirl of 12 years who had erysipelas, abscesses in hand and lung, staphylococcus aureus septicaemia and spontaneous pyopneumothorax following the rupture of a subpleural pulmonary abscess. The child was recovering when she died suddenly on the twentieth day of her illness. Clinical and partial pathological examination revealed the condition.—*Spontaneous Nontuberculous Pneumothorax, J. Browder, Am. J. Surg., September, 1929, n.s. vii, 415.* —(*H. S. W.*)

Fibrin Body in Pneumothorax.—The presence of fibrin bodies in pneumothorax cavities has been noted on ten occasions. All cases concern patients with pulmonary tuberculosis, who were receiving pneumothorax treatment. A serous or haemorrhagic exudate developed in every instance and preceded the appearance of these fibrin bodies. The exudate was observed to be in the right chest in every instance but one. The fibrin bodies were multiple on two occasions. These fibrin bodies cause no discomfort and usually disappear, but the exudate disappears first.—*Fibrin Body in Pneumothorax Cavity, H. C. Ballon, Am. J. Roentgenol. & Rad. Ther., September, 1929, xxii, 238.*—(*W. I. W.*)

Pneumothorax Associated with Emphysema.—It is suggested that pneumothoraces be classified in the following way: According to the basic disease in tuberculous, abscess-, emphysema-, and pleuritis-pneumothoraces; according to the immediate causative factor; external trauma (physical exertion), internal trauma (coughing, sneezing), spontaneous (perforation of a cavity or an abscess without trauma). Two patients are reported in careful detail, in whom coughing produced a pneumothorax; they both had emphysema. A third patient developed a pneumothorax on the basis of a pleuritis; the immediate cause, in this case, was also coughing. The diagnosis of a spontaneous pneumothorax is easy when a majority of the characteristic signs and symptoms are present. Whether this is the case or not depends on the intrathoracic pressure, on the condition of the contralateral lung and on the condition of the homolateral pleura. Considerable emphysema of the other lung, encapsulated effusions, and extensive adhesions may obscure the diagnostic signs. In cases of massive emphysema it is particularly difficult to rule out the presence of subpleural tuberculous foci. In two of the reported cases, the diagnosis was made clinically only; the roentgenological examination did not reveal any evidence of pneumothorax. If air is spread as a thin mantle over the pulmonary surface, the condition may not be recognized roentgenologically. The prognosis is determined by the aetiological diagnosis. Nontuberculous pneumothoraces heal well and without complications, as a rule. The prognosis depends further on the amount of air present, on the shifting of the mediastinal structures, and on the function of the circulatory system. When symptoms of pressure occur (shifting of mediastinum, dyspnoea, circulatory disturbances, etc.), air should be removed.

Otherwise, simple rest will usually be sufficient.—*Ueber den Emphysempneumothorax, H. Krasso, Wien. klin. Wchnschr., May 16, 1929, xlii, 676.*—(*M. P.*)

Rapid Breathing from Pulmonary Congestion and Oedema.—In 1920 Dunn demonstrated that multiple embolism of the pulmonary arterioles and capillaries is followed by a temporary inhibition of respiration, succeeded by rapid shallow breathing. He attributed this phenomenon to the stimulation of sensory nerve-endings in the lung. This explanation was favored by the fact that the injection of starch produced no alteration in the respiratory rate when both vagi had been previously sectioned. From a carefully planned series of experiments concerning the effects of pulmonary embolism and other modifications of the pulmonary circulation, Binger, Moore, *et al.* (1924, 1927) conclude as follows: Since rapid and shallow breathing is not the result of (1) anoxaemia, (2) increased p CO_2 and hydrogen-ion concentration of the blood, (3) restriction of the pulmonary vascular bed by nearly one-half, (4) increase in resistance to the flow of blood to and from the lungs, (5) the presence of starch grains in the lungs acting as a local irritant, it must be the result of the secondary pathological changes which occur in the pulmonary parenchyma following embolism. Whether these changes (congestion and oedema) operate directly on nerve-endings or through their influence on lung volume and tissue elasticity is not certain. During the course of an investigation having quite another bearing the authors of the present article made certain observations which appear to demonstrate the occurrence of the usual signs of vagal stimulation in association with the experimental production of pulmonary congestion and oedema. As the method employed was completely different from those employed by Dunn or Binger, it is reported in detail. A Drinker heart preparation was made in a cat anaesthetized with intravenous sodium-barbital (5 per cent solution). This procedure, when complete, leaves the heart exposed in a normally breathing animal, and is easily made by suturing the edges of the pericardium to the margins of an oval window created in the anterior wall of the chest by the removal of the sternum. After the closure of the chest and the resumption of normal respiration, ligatures were placed about the right branch of the pulmonary artery, and the group of right pulmonary veins, respectively. A cannula inserted into the right branch of the pulmonary artery, distal to the point of ligation and connected by tubing to a glass reservoir, permitted changes in pressure by raising or lowering the reservoir. The pressure obtained was recorded with a manometer. At the same time records were also made of the systemic blood-pressure, pulse-rate and respiratory movements. In such a preparation the right lung is isolated from the rest of the circulation of the animal except for the amount of blood that may enter it through the bronchial artery. Ventilation of this lung is maintained by the normal respiratory movements of the animal as the lung is in its normal position in the closed pleural cavity. By changing the height of the reservoir connected to the cannula in the right branch of the pulmonary artery, it is possible to alter the intravascular pressure in this isolated lung. Such changes may be produced without directly modifying the dynamics of the systemic circulation or altering the gaseous exchange in the circulating blood. The latter is maintained by the normally functioning left lung. This experimental production of pulmonary congestion and oedema in a lung completely isolated from the general circulation, but with an intact nerve-supply, was repeated fifteen times on six different cats with perfectly consistent results. These are a slowing of the heart-rate, a fall in systemic blood-pressure, and a temporary inhibition of respiration succeeded by rapid shallow breathing. The pulse-rate and blood-pressure show a rapid and spontaneous return to initial conditions. The respirations show a partial but not a complete return to their former rate and depth. The effects on respiration are similar to those described by Dunn and Binger and Moore which follow multiple embolism of the pulmonary circuit with starch granules. The alterations in the pulse-rate and blood-pressure are characteristic of the effects of vagal stimulation. A chemical effect on the respiratory centre is excluded by the nature of the preparation. These results, therefore, add further evidence to support the hypothesis that the rapid shallow breathing attending congestion and oedema of the lungs is due to the stimulation of nerve-endings in the lungs.—*The Rapid Shallow Breathing Resulting from Pulmonary Congestion and Edema, E. D. Churchill and O. Cope, J. Exper. Med., April, 1929, xlix, 531.*—(*J. S. W.*)

Psittacosis.—Psittacosis is an epidemic disease of parrots, the chief symptoms being general debility, loss of appetite, and chronic enteritis. Its mortality among infected birds is very high. The disease was first recognized by Ritter of Germany in 1879. It was not until 1892, however, that the disease was recognized in man. At that time there occurred in Paris an epidemic of psittacosis, which was at first thought to be an unusual

manifestation of influenza. Dubief was the first to suggest that the disease was transmitted from ill parrots to man. Nocard isolated a bacillus from the bone-marrow of affected parrots and established it as the cause of their disease. Gilbert and Fournier later isolated from a human case an organism indistinguishable from Nocard's. Of four cases of psittacosis in man here reported, two completely recovered, and two died, but postmortem examination was not made. Symptoms may be referable to the pulmonary, gastrointestinal and nervous systems. A very troublesome cough without expectoration was present in all of the cases reported. Pain in the chest and slight to moderate dyspnoea were also noted. The most conspicuous symptoms referable to the gastrointestinal system were anorexia, vomiting after meals, pain in the epigastrium, abdominal distention and diarrhoea. Nervous symptoms were delirium lasting several days, headache, high fever at least a few days prior to death, and slow pulse in comparison to the temperature range. Physical signs over the chest are at first very meagre; later they become those of a diffuse bronchopneumonia, with impairment of percussion note, bronchovesicular to bronchial breathing, and fine to medium, and sometimes coarse râles. It is striking that while in parrots the lesions are limited to the alimentary tract, in human beings it is the pulmonary complications that are the most conspicuous features of the disease. The chief clinical point of this discussion is that anomalous cases of continued fever, in some ways suggestive of typhoid septicaemia with moderate to marked pulmonary involvement, should always raise the question of the possibility of psittacosis infection.—*Psittacosis, with an Account of Cases of Human Infection, A. P. Thomson, Lancet, July 20, 1929, ccxvii, 115.—(H. McL. R.)*

Nematode Infestation of Lung.—A case is reported from Manila, P. I., the first on record, of infestation of a human lung by a nematode of the genus *Cyathostoma*. The patient, shortly after his return from a trip on which, because of certain hardships, he was often exposed to contamination with the dejecta of birds and animals, began to suffer from acute bronchitis, which persisted for more than five months. The symptoms were severe coughing in the mornings, with occasional tenacious rust-colored sputum, and wheezing respiration, with the nightly development of typical asthmatic attacks. After two months slight haemoptysis was frequently noted, there was intense laryngeal tickling, a dull aching pain over left bronchus, but no fever or loss of weight. There was an area in the second left intercostal space near the sternum which seemed to bulge on coughing, caused pain and tenderness, and yielded medium râles on auscultation. Roentgenographs were negative, the sputum was mucopurulent, and there was an eosinophilia varying from 7 to 28 per cent. Many ova were found in the sputum. Inhalations proved useless, as well as intravenous neoarsphenamine. The patient finally expelled a female nematode 16.6 mm. long in the sputum, and his health rapidly returned to normal.—*Infestation of the Lung by a Nematode of the Genus Cyathostoma, J. H. St. John, J. S. Simmons and L. L. Gardner, J. Am. M. Ass., June 1, 1929, xcii, 1818.—(G. L. L.)*

Pulmonary Lymphogranulomatosis.—The author presents a case of pulmonary lymphogranulomatosis complicated with tuberculosis. The combination of lymphogranulomatosis with tuberculosis is rare. The blood picture usually is one with a leucocytosis and outspoken lymphopenia. The Wessler and Green differential diagnostic point of enlargement of the right paratracheal lymph nodes was absent in this case. The differential points between carcinoma and tuberculosis are discussed.—*Über die Lymphogranulomatose, insbesondere deren pulmonale Form, A. Bernstein, Zeitschr. f. Tuberk., 1928, lii, 202.—(H. J. C.)*

Lymphadenoma.—A case of coexisting Hodgkin's disease and tuberculosis, occurring in a young white male, is reported. Microscopic studies revealed necrotic foci in the glands. These necrotic foci occur in lymphadenomatous nodes and they must be differentiated from areas of caseation.—*Coexistence of Lymph Adenoma and Tuberculosis, T. K. Menon and T. B. Menon, Brit. M. J., June 8, 1929, no. 3570, 1037.—(W. I. W.)*

Coccidioidal Granuloma.—A study was made of 50 cases of coccidioidal granuloma, the average age of the patient being 28 years, 41 males and 9 females. Fifteen patients gave a history of pulmonary symptoms, 2 to 16 weeks prior to the initial external lesion. Twenty-six of the 40 cases in which roentgenographs pertinent to the pathological process were obtained gave evidence of active pulmonary lesions. These lesions are of two types: A diffuse shadow, sometimes to the degree of pneumonia, usually seen early in the course of the disease, and a miliary involvement seen late, the latter type in 7 cases. In two cases there was superior mediastinal broadening. Some serial films revealed a change of location of the diffuse shadow from one side to the other, showing

that the roentgenological evidence can entirely disappear. X-ray evidence occurred in the right lower lobe twice as frequently as in any other part of the lung fields, and twice as frequently in both hilar regions as in one. Lesions of long bones are three times as common in the epiphyseal ends as in the shafts. It is the opinion of the authors that there are three main clinical types of patients: *1:* Patients whose pulmonary infection is heavily seeded, who usually die before many or extensive somatic lesions have time to develop. *2:* Patients whose pulmonary infection is moderately seeded, with ignored pulmonary symptoms, but who develop multiple somatic lesions in which the organisms multiply and which become extensive with consequent blood-borne return infection to the lung, taking the form of miliary involvement, the duration of life usually averaging 9 months. *3:* Patients in whom the pulmonary infection is lightly seeded, who develop few somatic lesions which heal or become very chronic, such cases lasting for years or until lowered resistance results in a miliary pulmonary involvement.—*Coccidioidal Granuloma: Analysis of Fifty Cases, N. Evans and H. A. Ball, J. Am. Med. Ass., December 14, 1929, xciii, 1881.*—(*G. L. L.*)

Coccidioidal Granuloma and Tuberculosis.—The comparison of coccidioidal granuloma and tuberculosis in their acute and chronic forms is of considerable importance. The gross osseous and pulmonary lesions are identical with tuberculous lesions, except that there is less tendency to pulmonary cavitation and greater tendency to widespread osseous involvement than in tuberculosis. The diagnosis is established by the pathological laboratory. The roentgenograph is not a means of differentiation. For the diagnosis of coccidioidal disease, the double-contoured, endosporulating cell must be found in pus (or fixed tissue), with the characteristic cultural manifestations, and confirmed by inoculation into male guinea pigs. Suppurative orchitis is the diagnostic lesion. An autopsy is necessary in the human being for the diagnosis of the acute form in which there are no peripheral lesions. Although coccidioidal granuloma appears to be essentially a Western disease, infection has occurred in the Eastern and Midwestern states and in South America.—*Coccidioidal Granuloma: An Epidemiologic Survey, with a Report of Twenty-Four Additional Cases, W. T. Cummins, J. K. Smith and C. H. Halliday, J. Am. M. Ass., October 5, 1929, xciii, 1046.*—(*G. L. L.*)

Congenital Cystic Lung.—A patient, aged nineteen, had mild respiratory symptoms and cough. This case met the requirements, both clinically and roentgenologically, of a cystic lung of the congenital type and for lack of establishment of another definite aetiological factor, is considered such.—*Congenital Cystic Lung, D. N. Gibson, Am. J. Roentgenol. & Rad. Ther., August, 1929, xxii, 155.*—(*W. I. W.*)

Diaphragmatic Pleurisy.—In diaphragmatic pleurisy, the pleura covering the base of the lung or diaphragm is inflamed. This may occur either as an independent disease or coincident with inflammatory processes in the lungs or in subdiaphragmatic organs. Six cases in which the disease occurred as an independent manifestation were observed. The aetiology could not be established; in two cases, only, was there any reason to suspect tuberculosis, one patient having a tuberculosis of the hilar lymph nodes and the other patient having had apical tuberculosis. This disease produces more or less characteristic pains which should be grouped as spontaneous pain and pain upon pressure. Spontaneous and frequently quite violent pain is observed in the lower part of the diseased thorax and is aggravated by any diaphragmatic motion. The pain frequently radiates, chiefly to the shoulder. This pain is transmitted through the sensory fibres, which run in the phrenic nerve and which produce reflex pain through the fourth cervical segment. In addition, there exists a visceromotor reflex which produces an increased tonus in the musculature of the shoulder. Since the lateral part of the parietal pleura is frequently involved, pain over the lateral part of the ribs may occur. Mussey described the *boutons diaphragmatiques*, that is, the points on which pressure elicits characteristic pain. This induced pain is diagnostically more important than spontaneous pain. The most characteristic points of pressure are between the two insertions of the sternocleido muscle immediately above the clavicle, parasternally in the upper intercostal space, the point where the parasternal line and the continuation of the tenth rib meet, along the insertion of the diaphragm on the thorax, and in all the regions which are supplied by the cervical plexus. The first point of pressure was present in all 6 cases, whereas the findings in regard to the other points were irregular. The physical findings are similar to those of unilateral paralysis of the diaphragm, but paradoxical breathing is absent. The massive impairment of the percussion sound in the lower part may simulate an effusion, but the shape of the upper limit is different and the paravertebral triangle is absent. There may be some tympanitic note over the

lung immediately above the dulness, due to the relaxation of the pulmonary tissue. The auscultatory findings are not characteristic, with the exception of the decreased breathing sounds above the area of dulness. The respiratory rate is usually markedly increased. The diseased side lags. A sudden contraction of the abdominal rectus muscle near its insertion on the thorax at the beginning of inspiration has been described as a characteristic sign, but it was absent in all 6 cases. The temperature is usually slightly elevated. The X-ray picture of the chest shows a high and smooth diaphragm, without any process in the lung, which may account for a retraction, and without evidence of increased intraäbdominal pressure. The tonus of the diaphragm is decreased, as indicated by a sudden elevation with each sniffling inspiration. In this regard, the diaphragm behaves differently from any other muscle which is covered with serosa. All other such muscles are contracted and increased in tonus in the presence of inflammation of the serosal covering. It is, therefore, likely that in diaphragmatic pleurisy, the serositis is associated with a myositis or with impairment in the neuro-muscular junction. In addition to the elevation of the diaphragm, there is always a more or less pronounced impairment of motion. There is, however, no complete paralysis. Serial roentgenographs show that coincident with an abrupt disappearance of pain, the elevation of the diaphragm disappears usually suddenly. The manifestation and the course of the disease are so characteristic that diaphragmatic pleurisy should be recognized as a clinical entity. Elevation of one leaf of the diaphragm with negative findings in the lung, with lagging of the diseased side of the thorax, with a smoothly curved diaphragmatic line, and with decreased tonus in the presence of the more or less characteristic, spontaneous and induced pain, are considered pathognomonic for the disease.—*Die Pleuritis Diaphragmatica als Selbstandige Erkrankung, L. Hollaender, Klin. Wchnschr., November 19, 1929, viii, 2194.*—(*M. P.*)

Subdiaphragmatic Gas.—The roentgenological finding of gas under the right dome of the diaphragm is always of diagnostic importance. Two cases of hepatoptosis and two of ruptured viscus are reported. There is a discussion of the differential diagnosis of conditions causing gas under the right dome of the diaphragm, including hepatoptosis, gas from ruptured viscus, ptosis of the abdominal viscera, subphrenic abscess, and free gas following operation.—*Significance of Gas under the Right Dome of the Diaphragm, E. P. Pendergrass and E. Kirk, Am. J. Roentgenol. & Rad. Therap., September, 1929, xxii, 238.*—(*W. I. W.*)

Tuberculosis and Syphilis.—The difficulty in the differential diagnosis between pulmonary syphilis and pulmonary tuberculosis is pointed out and it is recommended that every new admission be submitted to a Meinicke flocculation test. Among 1,403 sanatorium cases 53 were positive, and of these 27 denied infection and were found to have a latent syphilis. A latent syphilis with a positive serum reaction is not given antisyphilitic treatment. The reaction showed a nonspecific result in only 0.5 per cent of those examined.—*Tuberkulose und Lues. Meinickes Trübungsreaktion, die geeignete Reaktion zur systematische Verwendung in Heilstätten. T. Filter, Zeitschr. f. Tuberk., 1928, li, 473.*—(*H. J. C.*)

Syphilis of Lung.—A white female, unmarried, aged 39, because of frequent attacks of pleurisy and a family history of tuberculosis, had her chest roentgenographed at regular intervals. The plates, prior to November, 1927, were entirely negative. Following an attack of influenza the plates revealed a nodular consolidation extending out from the root of the right lung and invading the parenchyma of all three lobes. The shadow of the right diaphragm was faintly visualized through a thickened pleura which partly obscured the lower half of the chest. This consolidation was almost homogeneous in character and presented a sharp line of demarcation from the normal lung. Tuberculosis, abscess, bronchiectasis, primary carcinoma of the bronchus and metastatic tumor were excluded. Serial X-ray studies over a period of five months showed extension of the process. The blood Wassermann was positive. After three weeks of antisyphilitic treatment, the chest plates showed an almost complete disappearance of the lesion.—*Pulmonary Syphilis, R. G. Allison, Am. J. Roentgenol. and Rad. Ther., July, 1929, xxii, 21.*—(*W. I. W.*)

Ayerza's Disease.—In 1828 Laennec described dilatation of the pulmonary artery in chronic affections of the lungs. Ayerza has left no written account of his observations, but if we are to accept the writings of his pupil, Arrillaga, as embodying the teachings of his master, Ayerza's claim to a place in medical nosology must be based on his discovery in 1901 of the "black cardiac" syndrome due to syphilis of the lung and pulmonary artery. The many accurate pathological descriptions of undoubted syphilitic pulmonary arteritis, confirmed

by Warthin and Elizaldo, who in 1917 and 1921 demonstrated the spironema (treponema?) pallidum in the wall of such arteries, have placed the existence of this entity on a sound basis. Many early students of the syndrome recognized syphilis as a contributory cause in conjunction with chronic cardiopulmonary diseases. Though many authors have published cases of so called primary sclerosis (nonsyphilitic) of the pulmonary artery, Turnbull has seen no pathological evidence of a primary, non-inflammatory sclerosis, except the slight atherosclerosis of elderly subjects. He believes, however, that intimal degeneration may complicate chronic inflammation of the pulmonary stem and large branches. Just as emphysema and nonspecific fibrosis of the lungs may, by causing obstruction and hypertension in the lesser circulation, induce intimal hypertrophy and degeneration of the pulmonary artery, so also can peribronchial and interstitial pulmonary syphilis induce these changes. In the case here reported, the smaller branches were the seat of obliterating syphilitic arteritis, whereas the pulmonary stem and main branches showed the changes due to hypertension, namely, intimal hypertrophy with superimposed atheromatous degeneration. The clinical features are as follows: Cough and expectoration of long duration, more recent gradually developing dyspnoea, cyanosis, persistent headache, drowsiness, subnormal temperature, regular pulse, clubbing of the fingers, normal blood pressure, haemoptysis, and secondary erythrocythemia. X-ray examination reveals enlargement of the heart to the right and left, the pulmonary artery being especially enlarged, and also evidences of emphysema. An electrocardiograph will reveal striking right ventricular predominance. Congestive heart failure commonly precedes death, though the "black cardiac" may die without signs or symptoms of heart failure. The average case runs a protracted course over many years. Any disease leading to pulmonary hypertension may produce the same clinical symptoms. For differentiation reliance must be placed upon the clinical, radiographic, and electrocardiographic evidence of dilatation and hypertrophy of the right ventricle and pulmonary artery, together with evidence of syphilis in those exhibiting Ayerza's syndrome. Prophylaxis and treatment while the disease is in its pulmonary stage offer the best chance of success. Once cyanosis is established, little can be done apart from giving symptomatic relief. The pathological findings in the case reported are described in detail. Though no spironema (treponemata?) pallida were found, there was abundant evidence of the patient's having had syphilis, for the Wassermann reaction was positive and there was perforation of the palate, fibrosis of the tonsils and a scar on the penis. The syphilitic inflammation of the lung was entirely interstitial with no trace of bronchiolitis obliterans or of intraälveolar organization.—*Syphilis of the Lung with Pulmonary Arteritis (Ayerza's Disease), G. L. S. Konstam and H. M. Turnbull, Lancet, October 12, 1929, ccxvii, 756.*—*(R. M. F.)*

Pathogenic Fungi.—The various organic systems have been considered in their relation to fungus disease. Among the outstanding modern mycological advances, from the diagnostic viewpoint, there is the growing rôle of pseudotuberculosis, the ubiquity of dermatophytosis and the possibility of yeast cells being present in bone abscesses and meningitis. The physician must depend almost entirely upon the laboratory for the detection of fungus cases, particularly in nondermatological ones and in such important affections as pulmonary pseudotuberculosis. Therapeutically, there is as much or more "modernism" in the employment of the roentgen-rays and medication with thallium acetate, tartar emetic and iodine intravenously.—*The Place of Fungi in Modern Medicine, F. D. Weidman. Am. J. M. Sc., June, 1929, clxxvii, 832.*—*(W. I. W.)*

X-Ray Findings of Heart.—One hundred cases of congenital and acquired heart disease have been studied by clinical, electrocardiographic and roentgen-ray methods. This method of investigation helps to demonstrate the functional efficiency of the heart in respiration, the degree of pulsation, and relative changes in the various areas of the heart and vessel walls. The study of the pulmonary area is worth while in the decision between functional and organic heart disease. It explains the physical signs, such as murmurs, dilatation, and palpable thrills at the pulmonary area. Some of these signs may be due to hypertrophy of the conus of the right ventricle or dilatation or stenosis of the pulmonary artery. It is also valuable in the diagnosis of pulmonary stenosis and regurgitation, and in the clinical differentiation of diseases of the pulmonary and aortic valves where the lesion of mitral regurgitation and stenosis is present.—*Clinical and Roentgen Ray Findings in the Study of the Heart and the Great Vessels, G. J. Chandler and E. B. Holmes, Am. J. M. Sc., September, 1929, clxxviii, 364.*—*(W. I. W.)*

Asthma.—Four cases of asthma due to mayflies are reported. The disease is caused

by the inhalation of minute particles of the shed pellicle of these insects. Attention is called to the widespread distribution of these insects in rivers and fresh-water lakes throughout the world, and the possibility of their being sensitizing agents.—*Asthma Due to the Mayfly, K. D. Figley, Am. J. M. Sc., September, 1929, clxxviii, 338.*—(*W. I. W.*)

Asthma.—Cases of hypersensitiveness of whatever kind have of late been brought more closely into union. In cases of asthma, although one particular part seems to be affected, the whole body participates. The diet is very important in the treatment of the asthmatic. The proteins should be limited and whatever is eaten should be tested on the skin. Peptone, ultraviolet ray, glucose and insulin may be used in the treatment of asthma. Favorable results have been obtained with this form of therapy.—*A Note on the Treatment of Asthma, A. Auld, Brit. M. J., June 1, 1929, no. 3569, 990.*—(*W. I. W.*)

Allergy to Nonhaemolytic Streptococci.—In previous studies the authors noted an inflammatory (secondary) reaction which appeared about the eighth to tenth day after intracutaneous inoculations of rabbits with certain strains of green streptococci and at a time after the primary reaction had receded. Many features of the secondary reaction recall certain points in the type of allergy seen in tuberculous infections and the present paper offers evidence that, at the time and following the development of the secondary reaction, the animals have a type of hypersensitiveness similar to tuberculin allergy. The tests used to prove that the animal was hypersensitive were three,—ophthalmic, cutaneous and lethal. The first two proved the most useful because they could be repeatedly applied to the same animal and thus variations in its allergic state be roughly estimated. The ophthalmic reactions (the cornea was lightly scarified before the instillation of the bacterial sediment) resembled those severe lesions induced in tuberculous animals by the simple instillation of tuberculin into the conjunctival sac. The interesting point is that green streptococci which are so innocuous, relatively speaking, when applied in the manner described to a normal rabbit's eye, should set up such severe inflammatory reactions in the eyes of hypersensitive animals. The cutaneous reactions were elicited by reinoculating the skin with small doses of bacteria, first, with doses that gave reactions in normal rabbits, and second, with those that failed to elicit any gross reactions in normal rabbits. The lethal tests resulted in the death of many animals following intravenous inoculation with culture in amounts well tolerated by normal rabbits. When analogies can be applied, it seems that this hypersensitiveness of rabbits following the production of lesions with certain nonhaemolytic streptococci is comparable to the tuberculin type of allergy or the hypersensitiveness of infection. In these studies, although the primary inoculation in many instances was with cultures of the respective streptococci, in most instances the substance applied in testing was a broth filtrate and occasionally some bacterial fraction (nucleoprotein). Because of the relatively low primary virulence of nonhaemolytic streptococci, the test material (except fractions) was from living cultures. It was also found that to produce the type of allergy described it is necessary that foci be developed some place in the body, for hypersensitiveness did not follow intravenous inoculation. The secondary reaction (not the reaction of reinoculation) is believed to result as follows: Following the intracutaneous inoculation of rabbits with any strain of streptococcus there develops a state of tuberculin-like hypersensitiveness; but certain strains possess the capacity of stimulating the hypersensitiveness to a higher level than others, and certain rabbits are more capable of reacting, as is made evident by retesting the animals in different ways. Following the primary intracutaneous reaction (inoculation) there persists at these primary foci a certain amount of residual antigenic substance. When a sufficiently high degree of general hypersensitiveness develops, the cells in the immediate vicinity of the primary lesion are in a condition to react with small amounts of suitable bacterial substances whether they are either freshly introduced or residual. The secondary reaction is, therefore, apparently an evidence of the persistence of antigen at the site of the primary inoculation.—*Reaction of Rabbits to Non-Hemolytic Streptococci. I General Tuberculin-Like Hypersensitiveness, Allergy or Hyperergy Following the Secondary Reaction, C. L. Derick and H. M. Swift, J. Exper. Med., April, 1929, xlix, 615*—(*J. S. W.*)

Allergy Due to Cold.—Six patients are reported who exhibited local and general symptoms of cold allergy. The local effects on the skin were pallor during the period of exposure, followed by redness, swelling and increased heat of the hands after removal from the cold. Following a latent period of three to four minutes, a characteristic systemic reaction appeared, which was characteristic of that produced by histamine.—*Systemic Histamine-like Reactions in Allergy Due to Cold, B. T. Horton and G. E. Brown,*

Am. J. M. Sc., August, 1929, clxxviii, 191.—(W. I. W.)

Anaphylactic Shock.—*Case Report:* This case is reported because of the unique opportunity to examine roentgenologically a patient who was in shock after the administration of tetanus antitoxin following a minor operation. Serial roentgenographs revealed a diffuse pulmonary congestion which gradually subsided.—*Acute Pulmonary Edema of Anaphylactic Shock, H. F. Day, W. R. Sisson and E. C. Vogt, Am. J. Roentgenol. & Rad. Ther., October, 1929, xxii, 349.—(W. I. W.)*

Cottonseed Sensitization.—Sensitization to cottonseed and kapok is usually marked, and occurs with sufficient frequency to merit careful consideration. Of 214 patients who were found to be definitely positive to various types of substances, 6 per cent reacted to cottonseed protein, and of a series of 113 patients also definitely sensitive to some type of substance, five reacted to kapok protein, or 4.4 per cent. The ingestion of cottonseed products, or inhalation of dust from cotton or kapok, is capable of causing asthma and other allergic manifestations. Such sensitization may be determined with ease and safety by means of the cutaneous test. The cotton plant and the kapok tree are botanically related, and persons sensitive to cottonseed are frequently sensitive to kapok, but the reverse probably does not occur. Hyposensitization by means of hypodermic injections of a cottonseed extract is possible, by carefully determining the correct initial dosage and properly regulating increases.—*Cottonseed and Kapok Sensitization, G. T. Brown, J. Am. M. Ass., August 3, 1929, xciii, 370.—(G. L. L.)*

Tuberculosis and Malaria.—The author reports a series of 90 cases in which malaria existed as a secondary infection, and phthisis was of long duration but more or less stationary. In nonspecific pulmonary diseases there occurred a healing following malaria and similarly this condition was noted in genuine phthisis. A successful malaria cure occasioned an improvement of the pulmonary processes. Malaria is, however, in general a dangerous mixed infection in phthisis cases.—*Tuberkulose und Malaria. Ein Beitrag zu Mischinfektionsstudien, N. Sukiennikowa, Beitr. z. Klin. d. Tuberk., 1928, lxix, 350.—(H. J. C.)*

Brucella Abortus.—Individuals with lowered resistance, who drink raw milk infected with *Brucella abortus* may develop agglutinins in their blood-serum with or without the manifestation of appreciable clinical symptoms of undulant fever. Of 851 patients and 156 staff members in a sanatorium using raw milk, 91, or 9 per cent, showed abortus agglutinins in a dilution of 1 to 15 or higher. Twenty-four of the 91 had agglutinin titres varying from 1 to 45 to 1 to 3200. The presence of abortus agglutinins in human serum is evidence of infection with *Brucella abortus*. The agglutinins may persist in the serum for months or years after the recovery of the patient. There is complete lack of evidence of porcine infection in the herd supplying the sanatorium. The correlation between the periods of *Brucella abortus* infection of the milk supply and the occurrence of agglutinins in the sera of the patients indicates a bovine origin of the cases of undulant fever reported in this study. *Brucella abortus* may be present in small numbers in the milk of infected cows but these organisms may be eliminated for several years. The presence of *Brucella abortus* agglutinins in the blood-sera of cows does not determine whether they are discharging *Brucella abortus* in their milk. In a herd of 151 animals, no evidence was obtained of the infection of the milk of cows whose sera agglutinate at 1 to 60, while cultures of *Brucella abortus* were obtained from the milk of only 23 cows out of 56 with titres of 1 to 120 or higher. *Brucella abortus* was not isolated from the blood or from the urine of the infected cows.—*Brucella Abortus in Milk Supply as a Source of Agglutinins in Human Sera, M. J. King and D. W. Caldwell, Am. J. M. Sc., July, 1929, clxxviii, 115.—(W. I. W.)*

Antagonism between Tuberculosis and Poliomyelitis.—There is no record in the literature of tuberculous osteoarthritis occurring in the paralyzed limbs of persons who have had poliomyelitis. Extensive inquiry reveals the fact that no physician questioned has ever observed the association. It is a question whether persons so affected can develop tuberculosis in their sound joints or whether they ever have pulmonary or other visceral tuberculosis. Efforts have been made to study this question experimentally in rabbits and dogs by producing paralysis through intracranial injections of paraffine (for pressure) or alcohol, followed by local or intravenous inoculations of tubercle bacilli. Although the results were inconclusive in general, chiefly because of overdosing, it appeared that the articular reaction was less marked on the paralyzed side in some of the dogs. Studies on monkeys should be carried out with the virus of poliomyelitis. The possibilities of sero-

logical immunity should be looked into, provided experiments should confirm this clinical impression.—*The Antinomy of Tuberculosis and Infantile Paralysis, L. Lamy, J. Bone & Joint Surg., July, 1929, xi, 542.*—(*H. S. W.*)

Chronic Febrile Conditions without Organic Findings.—The author reviews the various theories of the origin of fever, and reports 16 cases in which subfebrile temperatures occurred in conclusion to an acute infection long after the infection had passed by and all symptoms had disappeared. In most cases the infections involved the nasopharyngeal tract or the genital apparatus or carious teeth. If the subfebrile temperature exists for any time it leads to a suspicion of a tuberculous infection. The author reports 2 cases in which there was a subfebrile temperature for a long time, with general symptoms, and in which in the one case there developed a corneal ulcer of the right eye unquestionably of tuberculous nature. In the second case the temperature was viewed as a functional one, but after two years' observation there developed an unquestioned pulmonary tuberculosis. In comparison to this the 16 cases were followed for a number of years without tuberculous manifestations occurring. It is concluded that these so called subfebrile conditions indicate a chronic condition, which is as a whole favorable and only in few cases leads to manifest tuberculosis.—*Uber chronische Fieberzustände ohne nachweisbaren Organbefund, F. Jahn, Beitr. z. Klin. d. Tuberk., 1928, lxx, 429.*—(*H. J. C.*)

Pregnancy and Tuberculosis.—Among 148 pregnant women entering the clinic during 1926 and 1927, mainly for interruption, there were 53 without active tuberculosis, and among the 92 with pulmonary tuberculosis there were 70 in the first, 17 in the second, and 5 in the third stages (Turban). In 11 cases pregnancy was interrupted. Interruption was not recommended in any of the first-stage cases. Of the 148 women 78 were subsequently observed and 41 gave birth normally, and of these 21 were in stage I, 5 in stage II and 15 revealed no activity. One patient in stage I developed an infraclavicular infiltration during pregnancy, and one case in stage II progressed unfavorably during it. In 6 cases there was a progressive retrogression and 5 of these in spite of abortion. The author concludes that pregnancy in the course of tuberculosis has an unfavorable influence only in individual cases, and mostly only in the presence of progressive disease. In these cases, and especially those with open tuberculosis, interruption is recommended, but not so in apical tuberculosis. Sterilization in active tuberculosis is not advised because of the possibility of subsequent healing of the case. In rapidly progressive tuberculosis interruption is without avail. Pregnant tuberculous women should be treated in the sanatorium.—*Schwangerschaft und Tuberkulose, E. Schrag, Zeitschr. f. Tuberk., 1928, li, 119.*—(*H. J. C.*)

Pregnancy and Tuberculosis.—The diagnosis and prognosis of early pulmonary tuberculosis is still too uncertain to permit a definite decision on the interruption of pregnancy. About equal numbers of deaths occurred in the author's material following interruption and noninterference. Of importance in prognosis is the constitution of the patient and the form of tuberculosis, since a favorable type of disease runs a good course without interruption and the unfavorable type a bad course with artificial abortion. A more reliable diagnosis and prognosis of early tuberculosis is desired in making a decision.—*Bemerkungen über Schwangerschaftsunterbrechung wegen Lungentuberkulose, A. Mayer, Zeitschr. f. Tuberk., 1928, li, 109.*—(*H. J. C.*)

Intrathoracic Tumors.—Tables of statistics are given which date back as far as 1854 and show the incidence of pulmonary cancer. The figures based on the percentage of total cancer cases have risen considerably in recent years, and this is considered definite evidence of the increased incidence of lung cancer both relatively and absolutely. It is chiely since the war that the subject of pulmonary cancer has come into great prominence, and most of the recent literature of importance is from America and Germany. There is no definite evidence of anything in the aetiology of cancer that is peculiar to the pulmonary form as distinct from cancer in general. The average age of incidence is about fifty years, and males are affected more often than females. The condition is less frequent in colored races. Tumors of all descriptions, both benign and malignant, are met with in the thorax. Of the benign growths may be mentioned fibromata, teromata, dermoids, and some of those of low malignancy such as chondrosarcomata and myelomata. Of the malignant growths, the carcinomata are probably the most frequent. Sarcomata are met with in younger subjects, and different varieties of endotheliomata are found at varying ages. Lymphogranuloma, whatever may be its pathogenesis, in its clinical manifestations within the thorax behaves very like a neoplasm. Primary carcinomata probably originate in the bron-

chial mucosa. Cases of intrathoracic new growths may be divided into certain broad groups, as follows: *1:* Those first seen with evidence of a pleural effusion. In younger persons tuberculosis is the most common cause, but in older subjects a sterile effusion is probably caused by new growths, especially if it is uniformly blood stained. *2:* Cases seen because of haemoptysis, which may be the only initial symptom. *3:* Cases whose histories and physical examinations suggest the presence of a localized intrathoracic infection. The differential diagnosis must often be deferred until autopsy. *4:* Cases with varied symptoms referable to the chest. In every patient of middle age whose symptoms and general condition seem incommensurate with the physical signs, new growth should be suspected. Of the various common symptoms dyspnoea is the most important. Its chief characteristics are its constancy and its tendency later to become paroxysmal. Cough, expectoration, and haemoptysis show no differential points. The presence of pain is variable and depends upon the site of the growth, being due to pleural involvement, erosion of bone, and pressure. General weakness is common, but the nutrition is often preserved. Frequently, patients mention a so called attack of influenza. Physical signs vary according to the size and situation of the lesion. Mediastinal growths may not be detected until involvement of the recurrent laryngeal nerve gives rise to a typical abductor paralysis of one vocal cord, or until there are other pressure symptoms. Dulness on percussion is characteristic of lesions located near the periphery. It also occurs when atelectasis is present as a result of bronchial involvement. Radiology is of paramount importance for differential diagnosis, and may be aided by lipiodol injections or artificial pneumothorax. Bronchoscopy, thoracoscopy, and exploratory thoracotomy may be of the greatest value as supplementary aids to diagnosis. Surgery and radium therapy offer much hope for the treatment of intrathoracic new growth.—*An Address on Intrathoracic and Pulmonary New Growths, M. Davidson, Lancet, December 7, 1929, ccxvii, 1181.*—(*R. M. F.*)

Malignant Tumors of Lung.—Most autopsy statistics seem to indicate that pulmonary neoplasms have increased in frequency during the past ten years. At the present time, about one per cent of all autopsies in large hospitals are pulmonary malignant tumors. Clinical diagnoses are made more frequently, on account of the extensive use of roentgenology. Men are more frequently the victims of carcinoma and sarcoma of the lung than women; and the right lobe is more frequently involved than the left. The initial symptoms are usually slight and uncharacteristic, and are frequently absent. Dull pain in the chest, radiating to the back, and in the sternal region are frequently present. Dyspnoea and cyanosis of the face, sometimes with cyanosis of both arms, are frequently present. Oedema is rare. Cough is inconstant and may be productive of sanguineous expectoration. A cytological examination of the sputum may establish the diagnosis. More frequently, a cytological diagnosis is possible from concomitant pleural effusions. A certain percentage of patients shows paresis of the recurrent nerve, hoarseness and dysphagia. A systolic downward movement of the larynx (Oliver Cardarelli's symptom) is sometimes observed. The temperature may be normal or elevated. Metastasis in the peripheral lymph nodes may be the first diagnostic phenomenon. The neoplasm may be complicated by abscess, bronchitis, atelectasis, pneumonia, pneumothorax, gangrene, empyema, bronchiectasis, tuberculosis and aneurysm. On account of the polymorphous nature of signs, symptoms and complications, the diagnosis is made *intra vitam* in only 25 to 50 per cent of the cases. The diagnosis should be made with the help of clinical, laryngological, roentgenological, bronchoscopical and histological methods. A diagnostically important roentgenological sign is the fact that the apex of the lung is usually not involved. A clinical differentiation between bronchial carcinoma and pulmonary carcinoma in the strict sense of the word is impossible. Metastases from sarcoma are distributed through the lymphatic channels. Aetiologically, nothing definite is known, as evidenced by the multiplicity of hypotheses. The duration of the disease is rarely longer than two years. Surgical and roentgenological attempts at treatment have been almost completely unsuccessful up to the present time.—*Lungenkrebs und Lungensarkom, E. Homann, Klin. Wchnschr., September 10, 1929, viii, 1720.*—(*M. P.*)

Cancer of Lung.—Fifteen cases of primary cancer of the lung are reported in which clinically and at the necropsy table excavations were found. In about one-third of the cases of neoplastic disease of the lung, necrosis occurs with cavity-formation. Patients with excavated carcinomata of the lung often present the seemingly typical symptomatology, physical signs and even roentgenoscopic appearance of abscess of the lung. In all instances of apparently primary abscess of the lung of recent onset in elderly individuals, the possibility of broken-down

neoplasm is to be borne in mind.—*Carcinomatous Abscess of the Lung, M. Fishberg, Am. J. M. Sc., July 1, 1929, clxxviii, 20.*—(*W. I. W.*)

X-Ray Diagnosis of Intrathoracic Tumors.—Pulmonary neoplasms fall roughly into two groups from the roentgenological standpoint. The first group, comprising cysts, teratomata, many tumors of lymphatic origin and certain types of metastases have definite characteristics and are rather easily diagnosed. Cysts are sometimes asymptomatic and accidental; sometimes responsible for symptoms. They are usually rounded, of varying size and position, and may present degenerative change and even calcification. Lymphatic tumors are fairly characteristic in the X-ray; they respond to X-ray therapy, and this often enables one to differentiate the tumor from a substernal thyroid, carcinoma, etc. Metastases are usually readily diagnosed. The second group comprises other pulmonary tumors. Infiltrative and massive changes suggest malignancy. Extrabronchial growths sometimes resemble the mediastinal tumors of lymphatic origin. Bronchial carcinomata are the most difficult of all intrathoracic growths to diagnose, the signs and symptoms varying considerably with the size of the lesion, the degree of obstruction or irritation it leads to, its position, etc. The commoner signs are the presence of tumor, collapse, obstruction as by a foreign body, infection, etc. More attention needs to be given to the question of pulmonary tumors.—*The Roentgen Diagnosis of Intrathoracic Neoplasms, J. T. Farrell, Radiology, July, 1929, xiii, 1.*—(*H. S. W.*)

Treatment of Cancer with Tuberculin.—In a paper by Pearl on the relation between cancer and tuberculosis (*Am. J. Hyg., 1928, ix, 97*) note was made of treatment of cancer in rats with living tubercle bacilli and tuberculin. In the discussion of these experiments it was decided, especially in view of the obvious deductions from the study of autopsy material, that it would be highly desirable to determine the result of treating malignant tumors in human beings with some form of tuberculin. The present paper is a preliminary report on the carrying out of this idea. Seven hopeless cases of malignant tumor were treated with tuberculin (bouillon filtrate from H37 strain). The dosage and interval were regulated according to the sensitivity of each individual patient, as determined by intracutaneous test with old tuberculin. There always appears to be a definite reaction in the tumor involvement, wherever located in the body, and caution must be used in increasing the dose because of the danger of too rapid production of toxic products. Histologically, noteworthy degenerative changes occur in the tumor tissues following treatment, and these appear to be in proportion to the amount of clinical damage suffered by the tumor. Unquestionably the lives of some, if not all, of the patients treated have been prolonged beyond the duration they would have realized had the tuberculin not been given. Positive conclusions are, of course, unwarranted from such a small series, but the results have been sufficiently encouraging to warrant further investigation.—*Experimental Treatment of Cancer with Tuberculin, R. Pearl, A. C. Sutton and W. T. Howard, Jr., Lancet, May 25, 1929, ccxvi, 1078.*—(*E. H. K.*)

Coincident Malignant Tumor and Tuberculosis.—The entire autopsy material from the Department of Pathology of the University of Michigan was statistically analyzed with a view to ascertaining any possible interrelationship of malignant tumor and tuberculosis. A total of 514 cases of malignant tumor was used, and 514 controls were set up in such a manner that errors arising from changing criteria or changing disease incidence and the possible error from the fact that malignant tumor is a disease occurring primarily later in life than tuberculosis were eliminated. Also, sex and racial differences were equalized. Cases in which examinations or records were incomplete were eliminated. A tuberculous lesion was not considered active unless tuberculous granulation tissue was found microscopically and there was evidence of proliferation or spread of the disease process; nor was it considered healed, unless healed tubercles were found. The results obtained are in close agreement with those of Pearl, and of Carlson and Bell. They found healed tuberculosis of equal incidence in both cancer and control series, with active tuberculosis much more common in the control series. As pointed out by Carlson and Bell, there is, however, an important objection to the use, as controls, of a group in which all manner of diseases were fundamental in causing death. They showed that a similar apparent antagonism can be demonstrated between heart disease and malignant tumor, and between heart disease and tuberculosis. In the present series of 514 cancer cases, practically all died as a direct result of the cancer, only 3 succumbing to tuberculosis. In the control group, 34 of the cases of active tuberculosis died as a result of this disease. A second series of cancer and control cases which are more nearly comparable was therefore set up.

In 24 of the 27, or 88.9 per cent of the active tuberculosis cases found associated with cancer, the tuberculosis was a secondary factor and not the cause of death. In setting up the second series the three cases dying of tuberculosis were excluded, leaving a total of 511 cases of malignant disease. Similarly the 34 cases from the control series in which the individual died of tuberculosis were excluded. These vacancies were filled by taking the next following protocol in the autopsy series, not already used as a control, which met the conditions already outlined for selecting controls. In the first series tuberculosis combined with cancer was being compared with tuberculosis, sometimes combined with another major disease and sometimes the only serious condition from which the individual was suffering. Such a comparison is obviously apt to lead to error. In the second series the tuberculosis is in every instance, in both cancer and control series, combined with another serious disease which caused death. From a study of this series it is impossible to demonstrate any correlation, positive or negative, between active tuberculosis and cancer. The fact that healed tuberculosis is found with equal frequency in cancerous and noncancerous individuals shows that a past infection is without bearing on the development of malignant tumor. The person with active tuberculosis is less apt to have cancer because he may die of his tuberculosis before he reaches the age at which cancer is most common. The occurrence together of the two diseases appears to follow closely the occurrence of tuberculosis with other serious diseases capable of causing death. Investigation of the problem of an interrelationship of cancer and tuberculosis has proceeded along two lines other than statistical studies, namely, by means of case studies, which yield many interesting reports but no valid evidence of the frequency of the combined diseases, and by experimentation. The results from animal experimentation are contradictory and inconclusive. The result obtained, or the lack thereof, in the treatment of cancer by tuberculin does not bear directly on the relationship of the two diseases, for the effect of the tuberculin may be due to the fact that it is a toxic substance and not to its derivation from the tubercle bacillus. Statistical studies have been inadequate until recently, and the two most recent and best disagree in their conclusions.—*A Statistical Study of the Coincidence of Malignancy and Tuberculosis, C. H. Fortune, Ann. Int. Med., November, 1929, iii, 495.*—(*R. M. F.*)

Key to Abstractors

E. H. K.: E. H. Kerper, Loomis, New York.
G. L. L.: George L. Leslie, Detroit, Mich.
H. J. C.: H. J. Corper, Denver, Col.
H. McL. R.: H. McL. Riggins, Loomis, New York.
H. S. W.: H. S. Willis, Baltimore, Md.
J. S. W.: J. Stanley Woolley, Loomis, New York.
M. P.: Max Pinner, Northville, Mich.
R. M. F.: R. M. Franklin, Loomis, New York.
W. I. W.: Walter I. Werner, Pontiac, Mich.